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Memorandum

To: *John McGuiggin, Volpe Center*
Jim Christiansen, EPA

From: *Timothy Wall*

Date: *June 4, 2003*

Subject: *2003 Air Sampling Program*
Libby, Montana Asbestos Remediation Project

The purpose of this memo is to propose a revised air sampling strategy in support of the cleanup program. The objective of this strategy is to achieve the objectives of the sampling program and maximize cost efficiency. The basis for the revisions and ultimate sample quantity reductions that will result from this proposal are the data collected during program implementation and trend analysis performed on those data.

The Libby Project air sampling is conducted to provide data that will:

- Confirm that the personal protective equipment in use is protective of potential exposures
- Confirm that contaminated material does not migrate outside the exclusion zone during removal activities

To accomplish these objectives under a revised strategy, CDM proposes that personal air samples be collected at a frequency of one per week from a removal activity during removal operation. The personal air sample will consist of one TWA sample and one STEL (30 minute excursion) sample. These samples will be analyzed by PCM only unless detections warrant confirmation by TEM. The personal air sample will be collected from various tasks during periods when potential exposure is highest. Resulting samples reduction scenarios compared with current protocol are present in Table 1.

The recommendation for the frequency of personal air sample collection is based on a review of the tasked-based data for personal air samples collected during the 2002 field work and 2003 field work completed to date. Assumptions used during the analysis of these data were:

- The geometric mean was used/reported and is relevant since these quantities are multiplied together to produce a product (e.g., the geometric mean answers the question "if all the quantities had the same value, what would that value have to be in order to achieve the same product?") versus the arithmetic mean which is relevant when quantities are

added together to produce a sum (e.g., answers the question "if all quantities had the same values, what would that value have to be in order to achieve the same total?").

- For samples in which concentrations were not observed above the level of detection, a surrogate value of one-half the detection limit was used in the calculation of the overall average time-weighted-average.

The table below presents the average TWA and excursion results identified during sampling activities.

Task	TWA Sample Count	TWA (f/cc)	Excursion Sample Count	Excursion (f/cc)
2003 Bulk Removal	49	0.078	36	0.108
2002 Bulk Removal	8	0.169	8	0.507
2003 Wet Wipe/HEPA vacuuming	41	0.026	34	0.044
2002 Wet Wipe/HEPA vacuuming	41	0.010	37	0.032
2002 Outdoor Labor	27	0.013	33	0.058
2002 Residential Excavator Operator	13	0.005	12	0.025

To accomplish the second objective, ambient air sample collection will be divided into two separate procedures. First, for removals that occur on the interior of a structure inside a negative pressure enclosure, no ambient samples will be collected. As a lower cost and equally effective alternative to the ambient air samples presently collected, the negative pressure differential between the environment outside of the negative pressure enclosure and the inside of the negative pressure enclosure will be monitored during removal activities. These negative pressure values will be electronically logged during the removal activities and stored as documentation of negative pressure maintenance. A minimum of -0.02 column inches of water pressure differential will be maintained during removal activities. Additionally, the number of air changes in the negative pressure enclosure will be calculated and documented. A minimum of four air changes per hour will be maintained during the removal activities. The negative pressure enclosure will be maintained under negative pressure throughout the period of use. Air movement in the negative pressure enclosure will be directed away from the employees performing the removal work.

Secondly, for removals that occur on the exterior of a structure, four ambient samples will be collected daily, one on each of four sides of the exclusion zone. Clean rooms of decontamination facilities and negative air filtration unit exhaust will be sampled at a rate of one sample per day for each removal.

CDM analyzed the air sampling data to evaluate the effectiveness and associated cost of the current air sampling protocol. After performing this analysis and evaluating the historic data trends we believe that the proposed revised protocol is equally effective and will result in substantial sample reductions and associated cost savings.

The above description of our methodology, recommendations, and sample reductions and assumptions presented in Table 1 should give you a basis for your evaluation and consideration of this proposal. However, if you need additional information please let me know and I will provide any additional information available to CDM.

Your immediate attention is greatly appreciated since we are in the process of increasing the number of property cleanups and should you disagree with our analysis and recommendations or should additional discussion and analysis be required we will need to mobilize additional staff to the site to conduct air sampling under the existing protocol. I look forward to you timely feedback so that we can implement this equally effective and less costly sampling strategy or appropriately staff for implementation of the existing protocol.

TABLE 1 - Sample estimate associated with 8 on-going removals

General assumptions:
- 6-day work week
- Blanks not included

Scenario 1

Specific assumptions:
Interior work only
5 properties of 8 requiring monitoring at any time during the week
Reduced personal air monitoring (per HEG)
Reduced ambient air monitoring (per HEG)

Personal air:	1/week	1	
Ambient air:	10/week	10	[1/week/clean room (5) and 1/week/NAFU (5)]
	AIR TOTAL:	**11**	
	Total Reduction/wk:	**169**	

Scenario 2

Specific assumptions:
Both interior and exterior work
5 properties of 8 requiring monitoring at any time during the week, 2 interior only and 3 exterior only
Reduced personal air monitoring (per HEG)
Reduced ambient air monitoring (per HEG)

Personal air:	1/week	1	
Ambient air:	10/week	10	[1/week/clean room (5) and 1/week/NAFU (5)]
Perimeter air:	4/site/day	72	
	AIR TOTAL:	**83**	
	Total Reduction/wk:	**115**	
Confirmation soil:	5/site	15	

Scenario 3

Specific assumptions:
Exterior work only
5 properties of 8 requiring monitoring at any time during the week
Reduced personal air monitoring (per HEG)
Reduced ambient air monitoring (per HEG)

Personal air:	1/week	1	
Ambient air:	10/week	10	[1/week/clean room (5) and 1/week/NAFU (5)]
Perimeter air:	4/site/day	120	
	AIR TOTAL:	**131**	

	Total Reduction/wk:	**67**
Confirmation soil:	5/site	25

Total air samples w/o decrease

30/week
150/week

180

30/week
96/week
72/week

198

18/week
60/week
120/week

198